

DAFTAR PUSTAKA

- Abbott, S. L., Wendy K. W., Cheung, & Janda, J. M. (2003). The genus *Aeromonas*: biochemical characteristics, atypical reactions, and phenotypic identification schemes. *Journal Of Clinical Microbiology*, 41(6).
- Abbott, S.L. & Janda, J.M. (2010). The genus *Aeromonas*: taxonomy, pathogenicity, and infection. *Clinical Microbiology Reviews*, 23(1), hlm. 35-75.
- Acumedia. (2011). *MacConkey agar* (7102). [Online]. Diakses dari http://www.neogen.com/Acumedia/pdf/ProdInfo/7102_PI.pdf.
- Alperi, A., Martinez-Murcia, A. J., Monera, A., Saavedra, M. J., & Figueras, M. J. (2010). *Aeromonas fluvialis* sp. nov., isolated from a spanish river. *International Journal of Systematic and Evolutionary Microbiology*, 60, hlm. 72-77.
- Aravena-Roman, M., Harnett, G. B., Riley, T. V., Inglis, T. J. J., & Chang, B. J. (2011). *Aeromonas aquariorum* is widely distributed in clinical and environmental specimens and can be misidentified as *Aeromonas hydrophila*. *Journal of Clinical Microbiology*, 49(8), hlm. 3006-3008.
- ASMMicrobelibrary. (2013a). *Indol test protocol*. [Online]. Diakses dari <http://www.microbelibrary.org/component/resource/laboratory-test/3202-indole-test-protocol>.
- ASMMicrobelibrary. (2013b). *Citrate test protocol*. [Online]. Diakses dari <http://www.microbelibrary.org/component/resource/laboratory-test/3202-citrate-test-protocol>.
- ASMMicrobelibrary. (2013c). *Methyl Red and Voges-Proskauer test protocols*. [Online]. Diakses dari <http://www.microbelibrary.org/component/resource/laboratory-test/3202-methyl-red-and-voges-proskauer-test-protocol>.
- ATCC The Essentials of Life Science Research. (2014). *Aeromonas hydrophila* (Chester) Stanier (ATCC® 7966™). [Online]. Diakses dari <http://www.atcc.org/Products/All/7966.aspx#history>.
- Avisé, J. C. (1994). *Molecular marker, natural history and evolution*. New York: Chapman & Hall.
- BD. (2013). *MacConkey agar Difco™ & BBL™ manual, 2nd Edition*. United States and Canada: BD.
- Beaz-Hildago, R., Agueria, D., Latif-Eugenin, F., Yeannes, M. I., & Figueras, M. J. (2014). molecular characterization of *Shewanella* and *Aeromonas*

Riska Lisnawati, 2015

ANALISIS FILOGENETIK BAKTERI *Aeromonas hydrophila* DARI ISOLAT IKAN SEHAT MENGGUNAKAN SIKUEN GEN *gyrB*

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

isolates with spoilage of common carp (*Cyprinus carpio*). *FEMS Microbiology Letters Advance Access*.

Bergey's Manual of Systematics Determinative Bacteriology of Archaea and Bacteria. (2005). *Bergey's Manual of Systematics Determinative Bacteriology of Archaea and Bacteria*. [Online]. Diakses dari <http://www.bacterio.cict.fr/>.

Brady, C., Denman, S., Kirk, S., Venter, S., Rodriguez-Palenzuela, P., & Countinho, T. (2010). Description of *Gibbsiella quercinecans* gen. nov., sp. nov., associated with acute oak decline. *Systematic and Applied Microbiology*, 33, hlm. 444-450.

Brumlik, M. J. & Buckley, J. T. (1996). Identification of the catalytic triad of the lipase/acyltransferase from *Aeromonas hydrophila*. *Journal of Bacteriology*, hlm. 2060-2064.

Bryn, K., Ulatrup, J. C., & Stbrmer, F. C. (1973). Effect of acetate upon the formation of acetoin in *Klebsiella* and *Enterobacter* and its possible practical application in a rapid Voges-Proskauer test. *Applied Microbiology, American Society for Microbiology*, 25(3).

Buxton, R. (2013). Blood agar plates and hemolysis protocols. *American Society for Microbiology*.

Campbell, N. A., Reece, J. B., Urry, L. A., Mitchell, L. C., Wasserman, S. A., Minorsky, P. V., & Jackson, R. B. (2010). *Biologi 8nd Ed*. Jakarta: Erlangga.

Campbell, N. A., Reece, J. B., Urry, L. A., Mitchell, L. C., Wasserman, S. A., Minorsky, P. V., & Jackson, R. B. (2011). *Biology 9th ed*. United States of America: Pearson Benjamin Cummings.

Cappuccino, J. & Sherman, N. (2011). *Microbiology: a laboratory manual*. California: the benjamin comings publishing company Inc.

Carvalho, M. J., Martinez-Murcia, A., Esteves, A. C., Correia, A., & Saavedra, M. J. (2012). Phylogenetic diversity, antibiotic resistance and virulence traits of *Aeromonas* spp. from untreated water for human consumption. *Int. J. Food Microbiol*, 159(3), hlm. 230-239.

Cascon, A., Juan, A., Hernanz, C., Mari´A. S., Ferna, N., & Germa´N. N. (1996). Identification of *Aeromonas hydrophila* hybridization group 1 by PCR assays. *Applied And Environmental Microbiology, American Society For Microbiology*, 62(4).

Chaerun, S. K. (2014). Bioinformatik untuk identifikasi mikroba. *Symposium on Nanotechnology and Biotechnology*.

Riska Lisnawati, 2015

ANALISIS FILOGENETIK BAKTERI *Aeromonas hydrophila* DARI ISOLAT IKAN SEHAT MENGGUNAKAN SIKUEN GEN *gyrB*

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

- Chirila, F., N. Fit, G. Nadas, O. Negrea, & R. Ranga. (2008). Isolation and characterization of an *Aeromonas hydrophila* strain in a crap (*Cyprinus carpio*) toxemia focus. *Bulletin UASVM Veterinary Medicine*, 65(1).
- Cipriano, R. C. (2001). *Aeromonas hydrophila* and motile *Aeromonas* septicemias of fish. U.S. Geological Survey, Leetown Science Center, National Fish Health Research Laboratory.
- Conda. (2013). MacConkey agar European Pharmacopoeia. *Pronadisa Micro and Molecular Biology*.
- Costenaro, L., Grossmann, J. G., Ebel, C., & Maxwell, A. (2005). Small-angle X-ray scattering reveals the solution structure of the full-length DNA gyrase A subunit. *Structure*, 13, hlm. 287-296.
- Cynthia, S. (2007). *Lab manual untuk mikrobiologi untuk ilmu kesehatan*. [Online]. Diakses dari <http://onbonsai.com/201110/agar-darah-bap-medium-pertumbuhan-bakteri.htm>.
- Deen, A. E. N. E., Dorgham, S. M., Hassan, A. H. M., & Hakim, A. S. (2014). Studies on *Aeromonas hydrophila* in cultured *Oreochromis niloticus* at Kafr El Sheikh governorate, Egypt with reference to histopathological alterations in some vital organs. *World Journal of Fish and Marine Sciences*, 6(3), hlm. 233-240.
- Demarta, A., de Respinis, S., & Peduzzi, R. (2004). Molecular typing of *Yersinia frederiksenii* strains by means of 16S rDNA and *gyrB* genes sequence analysis. *FEMS Microbiology Letters*, 238, hlm. 423-428.
- Departement of Veterinary Disease Biology. (2011). *Aeromonas hydrophila*. [Online]. Diakses dari http://picture.life.ku.dk/atlas/microatlas/food/bacteril/Aeromoas_hydrophil a/.
- Dewi, C. L. H. (2012). *Analisis biomolekuler gen internal transcribed spacer (ITS) dalam studi filogenetik Zingiber loerzingii* Valetton (Zingiberaceae). (Skripsi). Departemen Biokimia Fakultas Matematika dan Ilmu Pengetahuan Alam Institut Pertanian Bogor.
- Dianti, L., Prayitno, S. B., & Ariyati, R. W. (2013). Ketahanan nonspesifik ikan mas (*Cyprinus carpio*) yang direndam ekstrak daun jeruji (*Acanthus ilicifolius*) terhadap infeksi bakteri *Aeromonas hydrophila*. *Journal of Aquaculture Management and Technology*, 4(2), hlm. 63-71.
- EPA Office of Water. (2006). *Aeromonas: human health criteria document*. Health and Ecological Criteria Division Office of Science and Technology Office of Water U. S. Environmental Protection Agency Washington.

- Erdem, B., Kariptaş, E., Cil, E., & Işık, K. (2011). Biochemical identification and numerical taxonomy of *Aeromonas* spp. Isolated From Food Samples In Turkey. *Turk J Biol*, 35, hlm. 463-472
- Figueras, M. J., Breambilla, E., Alperi, A., Monera, A., Beaz-Hidalgo, R., Stackebrandt, E., & Martinez-Murcia, A. J. (2011). *Aeromonas rivuli* sp. nv., isolated from the upstream region of a karst water Rivulet. *International Journal of Systematic and Evolutanary Microbiology*, 61, hlm 242-248.
- Gardenia, L., Koesharyani, I., Supriyadi, H., & Mufidah, T. (2010). Aplikasi *Aeromonas hydrophila* penghasil aerolisn dengan menggunakan Polimerase Chain Reaction (PCR). *Prosiding forum Inovasi Teknologi Akuakultur. Pusat Riset Perikanan Budidaya*.
- Griffin, M. J., Goodwin, A. E., Merry, G. E., Liles, M. R., Williams, M. A., Ware, C., & Waldbieser, G. C. (2013). Rapid quantitative detection of *Aeromonas hydrophila* associated with disease outbreaks in catfish aquaculture. *Journal of Veterinary Diagnostic Investigation*, 25(4), hlm. 473-481.
- Hall, T. (2004). *BioEdit version 7.0.0*. Ibis Therapeutics, a division of Isis Pharmaceuticals, Inc.
- Haryani, A., Grandiosa, R., Buwono, I. D., & Santika, A. (2012). Uji efektivitas daun pepaya (*Carica papaya*) untuk pengobatan infeksi bakteri *Aeromonas hydrophila* pada ikan mas koki (*Carassius auratus*). *Jurnal Perikanan dan Kelautan*, 3(3), hlm. 213-220.
- Hayes, J. (2004). *Aeromonas hydrophila*. [Online]. Diakses dari <http://hmsc.oregonstate.edu/classes/MB492/hydrophilahayes/>.
- Herupradolto, B. A. & Yuliani, G. A. (2010). Karakteristik protein spesifik *Aeromonas hydrophila* penyebab penyakit ulser pada ikan mas. *Jurnal Veteriner*, 3(11), hlm. 158-162.
- Hidayat, T, Kusumawaty, D, Kusdianti, Yati, D. D, Muchtar, Astry, A, & Mariana, D. (2008). *Analisis filogenetika molekuler pada Phyllanthus Niruri L. (Euphorbiaceae) menggunakan urutan basa DNA daerah Internal Transcribed Spacer (ITS)*. *Jurnal Matematika & Sains ITB*, 13, hlm. 16-21.
- Hidayat, T & Pancoro, A. (2006). *Sistematika dan filogenetik molekuler*. kursus simgkat aplikasi peramgkat lunak PAUP dan MrBayes untuk penelitian filogenetika molekuler SITH-ITB.
- Himedia. (2011). *RS medium base HiMedia laboratories*. [Online]. Diakses dari https://us.vwr.com/stibo/hi_res/8113202.pdf.

- Hu, M., Wang, N., Pan, Z. H., Lu, C. P., & Liu, Y. J. (2011). Identity and virulence properties of *Aeromonas* isolates from diseased fish, healthy controls and water environmental in China. *Letters in Applied Microbiology*, 55(3), hlm. 224-233.
- Illanchezian, S., Jayaraman, S. K., Manoharan, M. S., & Valsalam, S. (2010). Virulence and cytotoxicity of seafood borne *Aeromonas hydrophila*. *Brazilian Journal of Microbiology*, 41, hlm. 978-983.
- Jagoda, S. S. S. de S., Tan, E., Arulkanthan, A., Kinoshita, S., Watabe, S., & Asakawa, S. (2014a). Draft genome sequence of *Aeromonas hydrophila* strain Ae34, isolated from a septicemic and moribund koi carp (*Cyprinus caprio koi*), a freshwater aquarium fish. *GenomeA Journals ASM*, 3(2).
- Jagoda, S. S. S. de S., Wijewardana, T. G., Arulkanthan, A., Igarashi, Y., Tan, E., Kinoshita, S., Watabe, S., & Asakawa, S. (2014b). Characterization and antimicrobial susceptibility of motile *Aeromonads* isolated from freshwater ornamental fish showing signs of septicaemia. *Diseases of Aquatic Organisms*, 109, hlm. 127-137.
- Jayavignesh, V., Kannan, K. Sendesh, B., & Abhijith, D.. (2011). Biochemical characterization and cytotoxicity of the *aeromonas hydrophila* isolated from catfish. *Scholars Research Library*, 3(3), hlm. 85-93.
- Karp, A., Kresovich, S., Bhat, K. V., Ayad, W. G., & Hodgkin, T. (1997). Molecular tool in plant genetic resources conservation: a guide to the technologies. *IPGRI Tech. Bull*, 2.
- Khalaf, S. H., Ali, T. S., & Dhahi, S. J. (2005). The use of modified Rimler-Shotts agar as a selective medium for the isolation of *Aeromonas* species from children diarrhea in Mosul-Iraq. *Raf. Jour. Sci*, 16(7), hlm. 5-14.
- Kupfer, M., Kuhnert, P., Korczak, B. M., Peduzzi, R., & Demaerta, A. (2006). Genetic relationships of *Aeromonas* strains inferred from 16S rRNA, *gyrB* and *rpoB* gene sequences. *International Journal of Systematic and Evalutionary Microbiology*, 56, hlm. 2743-2751.
- Lee, S., Kim, S. Oh, Y., & Lee, Y. (2000). Characterization of *Aeromonas hydrophila* isolated from rainbow trouts in Korea. *The Journal of Microbiology*, 38(1), hlm. 1-7.
- Lee, H. Y. & Cote, J. C. (2006). Phylogenetic analysis of γ -proteobacteria inferred from nucleotide sequence comparisons of the housekeeping genes *adk*, *aroE* and *gdh*: comparisons with phylogeny inferred from 16S rRNA gene sequences. *J. Gen. Appl. Microbiol.*, 52, hlm. 147-158.
- Mabrouk, M. S., Hamdy, M., Mamdouh, M., Aboelfotoh, M., & Kadah, Y. M. (2006). BIOINFTool: bioinformatics and sequence data analysis in

Riska Lisnawati, 2015

ANALISIS FILOGENETIK BAKTERI *Aeromonas hydrophila* DARI ISOLAT IKAN SEHAT MENGGUNAKAN SIKUEN GEN *gyrB*

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

molecular biology using matlab. *Proc. Cairo International Biomedical Engineering Conference*.

Macrogen. (2014). *Macrogen sequencing troubleshooting guide*. [Online]. Diakses dari http://www.macrogen.com/eng/business/seq_service1.html.

Maesaroh. (2013). *Analisis filogenetik isolat bakteri Aeromonas hydrophila dari ikan sehat menggunakan gen 16S rRNA*. (Skripsi). FPMIPA UPI Bandung.

Manik, V. T. (2013). *Identifikasi dan filogenetika bakteri Aeromonas sp. isolat air kolam beberapa kota berdasarkan sekuens gen 16S rRNA*. (Skripsi). FPMIPA UPI Bandung.

Mangunwardoyo, W., Ismayasari, R., & Riani, E. (2010). Uji patogenisitas virulensi *Aeromonas hydrophila* strain pada ikan nila (*Oreochromis niloticus* Lin.) melalui postulat Koch. *J. Ris. Akuakultur*, 5(2), hlm. 245-255.

Martin-Carnahan, A. & Joseph, S. W. (2005). *Bergey's manual of systematics of determinative bacteriology 2nd Ed*. Philadelphia: Lippincott Williams & Wilkins.

Martinez-Murcia, A. J. (1999). Phylogenetic positions of *Aeromonas encheleia*, *Aeromonas popoffii*, *Aeromonas* DNA hybridization group 11 and *Aeromonas* group 501. *Int J Syst Bacteriol*, 49, hlm. 1403-1408.

Martino, M. E., Manfrin, A., Fasolato, L., Patarnello, T., Montemurro, F., Novelli, E., Rosteghin, M., & Cardazzo, B. (2011). Determination of microbial diversity of *Aeromonas* strains on the basis of multilocus sequence typing, phenotype and presence of putative virulence genes. *Applied and Environmental Microbiology*, 77, hlm. 4986-5000.

Nikiforov, I., Goldman, J., Cheriya, P., Vyas, A., & Nookala, V. (2014). *Aeromonas hydrophila* sepsis associated with consumption of raw oysters. *Hindawi Publishing Corporation Case Reports in Infectious Diseases*, 3.

Noga, J. E. (2000). *Fish disease diagnosis and treatment*. Iowa State Press. USA, 366p.

Nyffeler, R & D. A. Baum. (2000). Phylogenetic relationships of the durians (Bombacaceae Durioneae or [Malvaceae] Helicteroideae/ Durioneae) based on chloroplast and nuclear ribosomal DNA sequences. *Plant Systematics and Evolution*, 224, hlm. 55-82.

Odeyemi, O. A., Asmat, A., & Usup, G. (2012). Antibiotics resistance and putative virulence factors of *Aeromonas hydrophila* isolated from estuary. *Journal of Microbiology, Biotechnology and Food Sciences*, 1(6), hlm. 1339-1357.

Riska Lisnawati, 2015

ANALISIS FILOGENETIK BAKTERI *Aeromonas hydrophila* DARI ISOLAT IKAN SEHAT MENGGUNAKAN SIKUEN GEN *gyrB*

Universitas Pendidikan Indonesia | repository.upi.edu | perpustakaan.upi.edu

- Pangastuti, A. (2006). Review: species definition of procaryotes based on 16S rRNA and protein coding genes sequence. *Biodiversitas*, 3(7), hlm. 292-296.
- Pelczar, M. J. & Chan, E. C. S., (2005). *Dasar-dasar mikrobiologi*. Jakarta: Penerbit Universitas Indonesia (UI-Press).
- Pevsner, J. (2003). *Bioinformatics and functional genomics*. New Jersey: Wiley Liss, John Wiley & Sons, Inc..
- Popoff, M. (1984). *Bergey's manual of systematics of determinative bacteriology 1st Ed*. Philadelphia: Lippincott Williams & Wilkins.
- Pridgeon, J. W. & Klesius, P. H. (2011). Molecular identification and virulence of three *Aeromonas hydrophila* isolates cultured from infected channel catfish during a disease outbreak in West Alabama (USA) in 2009. *Diseases of Aquatic Organisms*, 94(3), hlm. 249-253.
- Promega. (2013). PCR Master Mix. *Promega Corporation*.
- Purnomo, M. & Pudjoarinto, A. (1999). *Struktur perkembangan i (morfologi tumbuhan)*. Yogyakarta: Fakultas Biologi UGM.
- Purwoko, T. (2009). *Fisiologi mikroba*. Jakarta: PT. Bumi Aksara.
- Santoso, P. J., Saleh, G. B., Saleh, N. M., & Napis, S. (2005). Phylogenetic relationships amongst 10 *Durio* species based on PCR-RFLP analysis of two chloroplast genes. *Indonesian Journal of Agricultural Science*, 6(1), hlm. 2027.
- Sarkar, A., Saha, M., & Roy, P. (2013). Detection of 232bp virulent gene of pathogenic *Aeromonas hydrophila* through PCR based technique: (a rapid molecular diagnostic aproach). *Advances in Microbiology*, 3, hlm. 83-87.
- Shotts, E. B. & Rimler, R. (1973). Medium for the isolation of *Aeromonas hydrophila*. *College of Veterinary Medicine American Society for Microbiology*, 26(4).
- Singh, V., Somvanshi, P., Rathore, G., Kapoor, D., & Misrha, B. N. (2010). Gene cloning, expression, and characterization of recombinant aerolysin from *Aeromonas hydrophila*. *Appl. Biochem Biotechnol*, 160, hlm. 1985-1991.
- Singh, V., Chaudhary, D. K., & Mani, I.. (2012). Molecular characterization and modeling of secondary structure of 16S rRNA from *Aeromonas veronii*. *Internastional Journal of Applied Biology and Pharmaceutical Technology*, hlm. 253-260.

- SNI 7303. (2009). *Metode identifikasi Aeromonas hydrophila secara biokimia*. BSNI.
- Soler, L., Yanez, M. A., Chacon, M. R., Aguilera-Arreola, M. G., Catalan V., Figueras, M. J. & Martinez-Murcia, A. J. (2004). Phylogenetic analysis of the genus *Aeromonas* based on two housekeeping genes. *International Journal of Systematic and Evolutionary Microbiology*, 54, hlm. 1511-1519.
- Stackebrandt, E. & Goebel, B. M. (1995). A place for DNA-DNA reassociation and 16S rRNA sequence analysis in the present species definition in bacteriology. *International Journal of Systematic Bacteriology*, 44, hlm. 846-849.
- Subandi, H. M. (2010). *Mikrobiologi*. Bandung: PT Remaja Rosdakarya.
- Swaminathan, T. R., Rathore, G., Rehana, A., Kapoor, D. (2004). Detection of *Aeromonas hydrophila* by Polymerase Chain Reaction. *Indian J. Fish*, 51(1), hlm. 251-254.
- Syadza, A. (2012). *Karakterisasi gen virulen dan uji patogenitas bakteri Aeromonas hydrophila strain A2 pada ikan gurame (Osphronemus gouramy)*. (Skripsi). FPMIPA UPI Bandung.
- Tekedar, H. C., Waldbieser, G. C., Karsi, A., Liles, M. R., Griffin, M. J., Vamenta, S., Sonaegard, T., Hossain, M., Schroeder, S. G., Khoo, L., & Lawrence, M. (2013). Complete genome sequence of a channel catfish epidemic isolate, *Aeromonas hydrophila* strain ML09-199. *Genomea.asm.org*, 5(1).
- Thermo Scientific. (2012). DreamTaq Green PCR Master Mix. *Product Information Thermo Scientific*.
- Vega-Sanchez, V., Latif-Eugenin, F., Soriano-Vargas, E., Beaz-Hildago, R., Figueras, M. J., Aguilera-Arreola, M. G., & Castro-Escarpulli, G. (2014). Re-identification of *Aeromonas* isolates from rainbow trout and incidence of class 1 integron and β -lactamase genes. *Veterinary Microbiology*, 172, hlm. 528-533.
- Vivas, J., Carracedo, B., Riano, J., Razquin, B. E., Lopez-Fierro, P., Acosta, F., Naharro, G., & Villena, A. J. (2004). Behavior of an *Aeromonas hydrophila* aroA live vaccine in water microcosms. *Applied and Environmental Microbiology*, 70(5), hlm. 2702-2708.
- Wang, G., Clark, C. G. Liu, C., Pucknell, C., Munro, C. K., Kruk, T. M. A. C., Caldeira, R., Woodward, D. L., & Rodgers, F. G. (2003). Detection and characterization of the hemolysin genes in *Aeromonas hydrophila* and

- Aeromonas sobria* by multiplex PCR. *Journal of Clinical Microbiology*, 41(3), hlm. 1048-1054.
- Watson, J. D., Baker, T. A., Bell, S. P., Gann, A., Levine, M., & Losick, R. (2004). *Molecular biology of the gene*. United States of America: Pearson Benjamin Cummings.
- Yamamoto, S. & Harayama, S. (1995). PCR amplification and direct sequencing of *gyrB* genes with universal primers and their application to the detection and taxonomic analysis of *Pseudomonas putida* strains. *Appl. Environ Microbiol*, 61, hlm. 1104-1109.
- Yamamoto, S. & Harayama, S. (1996). Phylogenetic analysis of *Acinetobacter* strains based on the nucleotide sequences of *gyrB* genes and on the amino acid sequences of their product. *Int J Syst Bacterial*, 46, hlm. 506-511.
- Yadav, S. Kumara, S., Pramod K., & Dixit, A. (2014). Characterization of immune response elicited by the recombinant outer membrane protein OmpF of *Aeromonas hydrophila*, a potential vaccine candidate in murine model. *Molecular biology reports*, 41(2), hlm. 1837-1848.
- Yanez, M. A., Catalan, V., Apraiz, D., Figueras, M. J., & Martinez-Murcia, A. J. (2003). Phylogenetic analysis of members of the genus *Aeromonas* based on *gyrB* gene sequences. *International Journal of Systematic and Evolutionary Microbiology*, 53, hlm. 875-883.
- Yu, H. B., Zhang, Y. L., Lau Y.L., Yao, F, Vilches, S., Merino, S., Tomas, J. M., Howard, S. P., Yeung, K.Y. (2005). Identification and characterization of putative viral genes and gene clusters in *Aeromonas hydrophila*. *Appl. Environ Microbiol*, 71, hlm. 4469-4477.
- Yuwono, T. (2005). *Biologi Molekuler*. Jakarta: Erlangga.
- Zhang, X., Yang, W., Wu, H., Gong, X., & Li, A. (2014). Multilocus sequence typing revealed a clonal lineage of *Aeromonas hydrophila* caused motile *Aeromonas* septicemia outbreaks in pond-cultured cyprinid fish in an epidemic area in central China. *Aquaculture*, 432, hlm. 1-6.
- Zuriah, N. (2007). *Metodologi penelitian sosial dan pendidikan teori-aplikasi*. Jakarta: Bumi Aksara.